



UNITED STATES DEPARTMENT OF COMMERCE  
Patent and Trademark Office

Address: COMMISSIONER OF PATENTS AND TRADEMARKS  
Washington, D.C. 20231

SERIAL NUMBER	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
---------------	-------------	----------------------	---------------------

08/253,855 06/03/94 SCHULZ-HARDER

J A4908

EXAMINER  
LEE, K

15M2/0113

ART UNIT PAPER NUMBER

HOFFMAN, WASSON & GITLER  
SUITE 522  
2361 JEFFERSON DAVIS HIGHWAY  
ARLINGTON, VA 22202

1513

DATE MAILED:

01/13/95

This is a communication from the examiner in charge of your application.  
COMMISSIONER OF PATENTS AND TRADEMARKS

☒ This application has been examined ☐ Responsive to communication filed on \_\_\_\_\_ ☐ This action is made final.

A shortened statutory period for response to this action is set to expire 3 month(s), 0 days from the date of this letter.  
Failure to respond within the period for response will cause the application to become abandoned. 35 U.S.C. 133

Part I THE FOLLOWING ATTACHMENT(S) ARE PART OF THIS ACTION:

- ☒ Notice of References Cited by Examiner, PTO-892.
- ☐ Notice of Draftsman's Patent Drawing Review, PTO-948.
- ☒ Notice of Art Cited by Applicant, PTO-1449.
- ☐ Notice of Informal Patent Application, PTO-152.
- ☐ Information on How to Effect Drawing Changes, PTO-1474.
- ☐ \_\_\_\_\_

Part II SUMMARY OF ACTION

- ☒ Claims 1-41 are pending in the application.  
Of the above, claims 18-23, 37-41 are withdrawn from consideration.
- ☐ Claims \_\_\_\_\_ have been cancelled.
- ☐ Claims \_\_\_\_\_ are allowed.
- ☒ Claims 1-17, 24-36 are rejected.
- ☐ Claims \_\_\_\_\_ are objected to.
- ☐ Claims \_\_\_\_\_ are subject to restriction or election requirement.
- ☐ This application has been filed with informal drawings under 37 C.F.R. 1.85 which are acceptable for examination purposes.
- ☐ Formal drawings are required in response to this Office action.
- ☐ The corrected or substitute drawings have been received on \_\_\_\_\_. Under 37 C.F.R. 1.84 these drawings are ☐ acceptable; ☐ not acceptable (see explanation or Notice of Draftsman's Patent Drawing Review, PTO-948).
- ☐ The proposed additional or substitute sheet(s) of drawings, filed on \_\_\_\_\_, has (have) been ☐ approved by the examiner; ☐ disapproved by the examiner (see explanation).
- ☐ The proposed drawing correction, filed \_\_\_\_\_, has been ☐ approved; ☐ disapproved (see explanation).
- ☒ Acknowledgement is made of the claim for priority under 35 U.S.C. 119. The certified copy has ☒ been received ☐ not been received  
☐ been filed in parent application, serial no. \_\_\_\_\_; filed on \_\_\_\_\_.
- ☐ Since this application appears to be in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under Ex parte Quayle, 1935 C.D. 11; 453 O.G. 213.
- ☐ Other

EXAMINER'S ACTION

Art Unit: 1513

**Part III DETAILED ACTION**

1. The claims have included numbers which are referring to some figures in the application. The examiner finds them confusing because applicant did not state which figure(s) the numbers are according to. Applicant is advised either to delete the bracketed numbers in the claims (preferred) or state which figure the numbers are referring to.

2. Claims 1-17 and 24-36 are rejected under 35 U.S.C. § 102(b) as anticipated by or, in the alternative, under 35 U.S.C. § 103 as obvious over Gyurk (Technical digest No. 4) or Nasu et al (USPN 5047279) or Spadafora et al (European 0149923).

Applicant discloses a multiple substrate with a ceramic layer. The ceramic layer forms at least two adjoining panels on which at least on surface side is laminated with a metal layer. Between the panels there is predetermined breaking line.

The predetermined breaking lines are in axial or angular directions according to the need.

Gyurk, Nasu, and Spadafora all teach a multiple circuit board comprising of a substrate on which a plurality circuit elements are formed on each section.

The substrate may be a reinforced resin layer or a ceramic layer. The substrates are made up of plurality of panels with circuit elements on it and having a predetermined break lines

Art Unit: 1513


which allow one to break a piece of the circuit panel from the substrate.

Gyurk, Nasu, and Spadafora discloses the claimed invention except for the angular break lines in the substrate. It would have been obvious to one having ordinary skill in the art at the time the invention was made to make and angular break lines since the examiner takes Official Notice of the equivalence of axial and angular breaking lines for their use in the break apart circuit board art and the selection of any of these known equivalents would be within the level of ordinary skill in the art.

3. Group 1500 of the Patent and Trademark Office has established an in group Fax Center. Communication may now be sent and received from this facility for conducting official business with the Patent and Trademark Office. The location of the Fax Center is Crystal Mall 1 7-C03. Two numbers are provided: (703) 305-3596 and (703) 305-3612.

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cathy Lee whose telephone number is (703) 308-2418.

cc: kfl;  
January 5, 1995

  
PATRICK J. RYAN  
SUPERVISORY PATENT EXAMINER  
GROUP 150